

## Scientific Progress and Community Partnerships

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In the midst of recent news such as financial crises, unemployment, businesses closing, and a host of other struggles, it's easy to forget that there are also many positive things coming our way. Science research at the Lab and local community partnerships continue to produce results vital to Northern New Mexico and the nation.

For instance, we are working to leverage scientific advances to better understand the world around us. Recently, Lab researchers may have discovered some of the science behind earthquake aftershocks using a novel device that simulates earthquakes in a laboratory setting. These observations may help us better understand aftershocks and whether or not sound waves might be able to provide a disruption to minimize damage.

Another exciting development is MagViz technology. In brief, ultra-low-field Magnetic Resonance Imaging is used to sort potential-threat liquids from the harmless shampoos and baby bottles that we would like to be able carry on commercial aircraft. Currently undergoing field testing at the Albuquerque International Sunport, the system can reliably identify approximately 50 liquids, with the capability to identify even more in the future. If the testing progresses as expected, the machines could be deployed by 2012—making air travel safer and easier for all.

And for a development that is out of this world—a small man-made pond in Northern New Mexico's Jemez Mountains was recently transformed into something of a miracle—a unique gamma-ray telescope, called Milagro, that has identified new regions of violent activity in the nearby universe. This water-based telescope is a precursor to a future, even more sensitive tool for peering into the high-energy universe and unveiling nature's cosmic accelerators.

Within the Community Programs Office, we continue to move in positive directions through partnerships for economic development (see the Small Business Assistance and Quality New Mexico articles), employee giving (see the LANL Laces and grant-writing workshop articles), and education (see the articles on the Museum talk, MATHCOUNTS, and teenage brains).

So, while the world might not always be as we'd like, there is ongoing progress to celebrate together.



## LANL Foundation Proposal Writing Workshop

Due to high demand, the LANL Foundation will hold a third Proposal Writing Workshop on March 12 from 8:30 a.m. to noon. The workshop includes effective research strategies, the Foundation's funding process, and creation of usable budgets and financial statements as tools for successful proposals.

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The workshop will also address the Foundation's competitive

educational outreach and small grant programs.

Admission to the workshop is free, but openings will be filled on a first-come, first-serve basis. To register for the workshop or obtain more information, visit the Foundation's website at <https://www.lanlfoundation.org/Grants/Workshop.html>.

## Quality New Mexico Conference in April

The 2009 Quality New Mexico Conference is April 1-2 in Albuquerque, with a \$50 early-bird discount for those registering by March 15. The two-day conference is intended for businesses, nonprofits, educators, health care, government, and other professionals to learn about best business practices, prepare for future challenges, as well as network with others from around the state. The conference will include a panel discussion, workshops, special speakers, and exhibits.



The Lab has been a long-time supporter and sponsor of Quality New Mexico and, over the

years, various Lab organizations have won Quality New Mexico awards. This year the Associate Directorate for Project Management Site Services will be recognized for achievement through a Roadrunner award for "building sound and systematic processes and in attaining improved organizational outcomes."

To obtain more information on the event, or to register, go to <http://www.qualitynewmexico.org/>.

## Q-Bio Public Lecture Series

On Tuesday, March 17, Ekaterina Nestorovich, a staff scientist with the National Institute of Child Health and Human Development, will present "Defending Against Anthrax: Cell Membrane Channels and Drug Design." The talk will be held at 7 p.m. at the Santa Fe Complex at 632 Agua Fria Street in Santa Fe. The talk will focus on how anthrax causes disease and how small-molecule drugs might be developed to thwart the threat of anthrax.

For more information on this talk, or any of the Q-Bio talks, go to [http://cnls.lanl.gov/q-bio/seminar-series/index.php/Public\\_Lectures](http://cnls.lanl.gov/q-bio/seminar-series/index.php/Public_Lectures).



## Lab Helps Small Business' Electrical Needs

When a small industrial area in New Mexico needed help dealing with energy issues, it turned to the State Economic Development Department's Office of Mexican Affairs. The State then enlisted the help of the New Mexico Small Business Assistance Program (NMSBA), managed by the

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Los Alamos and Sandia National Laboratories and the

Regional Development Corporation. The first company to benefit from this partnership was FFhoenix Cuivre, a copper fabrication and insulation company located in Santa Teresa, New Mexico, that received an energy-cost analysis conducted by LANL.

The company is now saving \$8,000 per month through implementation of a first set of recommendations. Implementation of additional recommendations should save the business up to \$40,000 per month in electricity costs and as much as \$60,000 per year in maintenance costs.

To learn more about the New Mexico Small Business Assistance Program and the services it offers to small businesses, contact the LANL Community Programs Office at (505) 667-1710 or e-mail [henne@lanl.gov](mailto:henne@lanl.gov).

## Pacemaker Pioneer Fascinates Audience

Everett “Ev” Nienhouse recently gave a talk at the Bradbury Science Museum where he detailed the events that led him, at the age of 39, to become the recipient of one of only two prototype nuclear-powered pacemakers in existence. Thirty-three years later, the plutonium-powered pacemaker attached to his heart is still functioning and has yet to need repairs.

Initially, pacemakers ran on nickel-cadmium (NiCd) batteries that needed to be replaced every two years—entailing major surgery for their recipients. Nuclear-powered pacemakers were used for several years because they virtually eliminated the need for power-source changes, and more than 1,000 nuclear-powered pacemakers were implanted in individuals worldwide over the next several years. These were later supplanted by lithium-powered batteries, which are still the standard today. While lithium batteries don’t have the life of nuclear-powered pacemakers, their 10-year life span far outpaces the life of the NiCd batteries and are frequently sufficient for those who require such devices.



While Nienhouse does not yet have any special trouble getting through airport security due to his radioactive pacemaker, he envisions a day when such may not be the case as screening systems become more and more sensitive to radioactive and other materials. However, he hopes that the wristband he wears and the special card he must carry as the recipient of the nuclear-powered pacemaker will be enough to allow him to travel freely in the future.

He also related that once he no longer needs his pacemaker, it will be shipped to Los Alamos National Laboratory for disposal of its nuclear materials, in a sense returning it to the location that helped make his pacemaker possible in the first place.

The Bradbury Science Museum frequently has speakers that should not be missed. Stay tuned to this publication or check the Museum’s web pages at <http://www.lanl.gov/museum/> for future talks.

## The Science of the Teenage Brain

What adult hasn’t wondered—at least once—what was going on in the head of a particular teenager? New scientific research indicates that what teenagers are feeling might be more important than what they’re thinking. Evidence from both behavioral and functional imaging studies will be presented during an upcoming talk suggesting that while adolescents are able to cognitively understand poor decisions, it is actually a lack of feelings about potential consequences that underlies lapses in their judgment.



Abigail Baird, the presenter, has a PhD from Harvard University and is currently an Assistant Professor of Psychology at Vassar College. Her talk “What Were You Thinking?: The Science of the Teenage Brain” is scheduled for Saturday, April 11 as part of a larger Teen

Brain Symposium that will also include a presentation on the affects of substance abuse on teenage brains. The entire program is scheduled to run from 9 a.m. (with a light breakfast beginning at 7:45 a.m.) to 12:30 p.m. at the University of New Mexico-Los Alamos and is geared toward parents and others who find themselves having to figure out how to better understand the teenage mind.

The program is free and open to the public, but requires advance registration. It is sponsored by the Los Alamos Juvenile Justice Advisory Board, Family Strengths Network, University of New Mexico-Los Alamos, and Los Alamos National Laboratory. For more information, go to <http://www.losalamosjjab.com>.

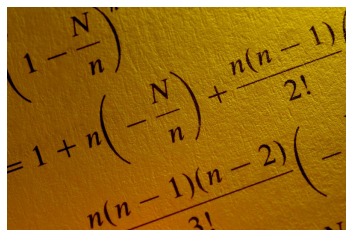
## Los Alamos Report Hot Off the Presses

Each Friday, the Lab compiles links to news stories that mention it. The sources referenced range from the *Los Alamos Monitor* to *Nanotechnology Now*. Some sources even include videos and references in fictional stories. To check out the latest collection of stories, go to <http://www.lareport.blogspot.com>. Alternatively, go to [listmanager@lanl.gov](mailto:listmanager@lanl.gov) and put “subscribe losalamosreport” in the body of the e-mail to have the news stories collections automatically delivered to your e-mail address each week.



## Regional Matheletes<sup>®</sup> Compete

Students from four Northern New Mexico schools will participate in the state's MATHCOUNTS competition later this month after progressing from a regional event held last month in Pojoaque. MATHCOUNTS is a middle school math competition that promotes mathematical competency. Teams start out at the local school level and practice throughout the year in preparation for the annual event.



Schools with teams scheduled to compete at the state level on March 14 in Albuquerque include Los Alamos and Pojoaque Middle Schools along with Pinon and Aspen Elementary Schools from

Los Alamos. State winners will progress to the national competition scheduled for May in Orlando, Florida.

In addition to the four schools advancing to the state competition, three other local schools competed at the regional event: Los Alamos Home, St. Michael's High, and, Santa Fe Preparatory Schools.

The Lab is sponsoring the regional event and would like to extend its congratulations to all the schools that participated in MATHCOUNTS this year. For more information, contact Janelle Vigil-Maestas at 665-4329 or [vigil-m@lanl.gov](mailto:vigil-m@lanl.gov).

## School to World Event Coming

The annual School to World event offers 8th and 9th grade students insights into potential future careers. Local businesses, government representatives, and educators come together to help students consider their various career options and what talents and educational choices it may take to achieve a particular goal. Students, parents, and teachers will have the opportunity to talk to representatives of over 150 different careers as well as various institutions of higher learning.

This year's event is scheduled for Saturday, March 14 at the Albuquerque Convention Center from 9 a.m. to 1 p.m. So far, 60 schools from Northern New Mexico and Albuquerque have registered to attend.

Last year's School to World sessions saw more than 2,000 students participating from all over the state. LANL is a sponsor of the event this year.

For more information visit the website at <http://schooltoworld.org> or contact Janelle Vigil-Maestas at 665-4329 or through [vigil-m@lanl.gov](mailto:vigil-m@lanl.gov) via email.

## World War II Talk at Bradbury Science Museum

Jorg Jansen, author of "And New Life Blossoms From the Ruins," will share his memories of growing up in World War II Germany at a talk at 5 p.m. on March 26 at the Bradbury Science Museum in Los Alamos.

Not only will Jansen discuss his experiences as a young child under Hitler's Third Reich, but also of the decade of turmoil following its collapse, and the early years of the German Federal Republic (West Germany). Jansen came to the United States in 1960 and joined the Lab in 1975 where he worked on several laser-related projects before his retirement.

The talk is free and open to the public. For more information on this or any of the Museum's talks, go to <http://www.lanl.gov/museum/events/>.



## LANL Laces has Sole

Last month, more than 150 school-age children were fitted with much-needed shoes courtesy of Lab employees through the LANL Laces program. The children were sized by a professional at The Shoe Department in Espanola prior to volunteers helping approximately 20 children at a time to find proper-sized shoes. The children came from seven different schools in the Jemez Mountain, Espanola Valley, Ohkay Oweenge, and Santa Fe Children's Zone school areas.

The Shoe Department management offered the shoes at a 5 to 15 percent discount to help maximize employee donations for the children. Lab volunteers who helped with the fittings came from six different LANL directorates, and employees



spent about two hours at a time helping the children pick out and try on shoes.

Lab employees who would like to make a financial contribution to the program can get a check to the Lab's Cashier's Office and indicate it's a donation to the LANL Laces program. They can either drop it off at the Cashier's Office in the Otowi Building or send it to Mail Stop P231. For more information on the program, or to volunteer for the next fitting opportunity, contact Tim Martinez with the LANL Community Programs Office at 665-4400 or [timothy@lanl.gov](mailto:timothy@lanl.gov) via e-mail.

## Contact Information

Connections is published by the Community Programs Office at Los Alamos National Laboratory.

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(888) 841-8256

For more information, e-mail [connections@lanl.gov](mailto:connections@lanl.gov) or visit our website at <http://community.lanl.gov/>

## Calendar

March 11	Environment	Community Radiation Monitoring Group <a href="http://www.lanl.gov/environment/calendar/detail/d090311.htm">http://www.lanl.gov/environment/calendar/detail/d090311.htm</a>
March 11	Environment	Northern New Mexico Community Advisory Board Environmental Monitoring, Surveillance & Remediation Committee <a href="http://www.lanl.gov/environment/calendar/detail/d090311.htm">http://www.lanl.gov/environment/calendar/detail/d090311.htm</a>
March 12	Business	The Power of Networking <a href="http://www.chamberorganizer.com/Calendar/moreinfo.php?eventid=18026">http://www.chamberorganizer.com/Calendar/moreinfo.php?eventid=18026</a>
March 15	Education	Northern New Mexico Competition for MathCounts <a href="http://mathcounts.org/Page.aspx?pid=294">http://mathcounts.org/Page.aspx?pid=294</a>
March 17	Business	Media & Public Relations Planning <a href="http://www.chamberorganizer.com/Calendar/moreinfo.php?eventid=18027">http://www.chamberorganizer.com/Calendar/moreinfo.php?eventid=18027</a>
March 18	Environment	Northern New Mexico Community Advisory Board Waste Management Committee Meeting <a href="http://www.lanl.gov/environment/calendar/detail/1200005D.htm">http://www.lanl.gov/environment/calendar/detail/1200005D.htm</a>
March 19	Environment	Upper Los Alamos Canyon Project <a href="http://www.lanl.gov/environment/calendar/detail/12000095.htm">http://www.lanl.gov/environment/calendar/detail/12000095.htm</a>
March 19	Business	The Press Release Workshop <a href="http://www.chamberorganizer.com/Calendar/moreinfo.php?eventid=18029">http://www.chamberorganizer.com/Calendar/moreinfo.php?eventid=18029</a>
March 25	Environment	Northern New Mexico Community Advisory Board Bi-Monthly Board Meeting <a href="http://www.lanl.gov/environment/calendar/detail/1200005E.htm">http://www.lanl.gov/environment/calendar/detail/1200005E.htm</a>
March 26	Environment	Upper Los Alamos Canyon Project Office Hours <a href="http://www.lanl.gov/environment/calendar/detail/12000095.htm">http://www.lanl.gov/environment/calendar/detail/12000095.htm</a>

For an expanded calendar, please go to <http://community.lanl.gov/source/orgs/cpo/cal3.shtml>

## Kudos



- To Sharon Dogruel and Jon Paul Romero who were recently voted onto the Pojoaque Valley School Board
- To LANL researchers Carol Burns and Jeffrey Hay who are the new 2008 Fellows of the American Association for the Advancement of Science
- To LANL's Jennifer S. Martinez for receiving the Presidential Early Career (PECASE) Award for Scientists and Engineers